Access DB# 39400

SEARCH REQUEST FORM

Scientific and Technical Information Center

4-5-01

Requester's Full Name: Natalie Davis Examiner #: 78462 Date: ~~3-28-01~~

Art Unit: 1642 Phone Number 30 Serial Number: 09/589,777

Mail Box and Bldg/Room Location: CM1 4C01 Results Format Preferred (circle): PAPER DISK E-MAIL

8E12

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: 4-22-98

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Please search EM1 and endostatin protein as they relate to claims 2-4 + 11.

Point of Contact
Beverly Shears
Technical Info. Specialist
CM1 12C14 Tel: 308-4994

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STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: Beverly 84994	NA Sequence (#)	STN ✓
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#)	Questel/Orbit
Date Searcher Picked Up:	Bibliographic	Dr.Link
Date Completed: 04-06-01	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 12	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time: 12	Other	Other (specify)

PTO-1590 (1-2000)

Davis, N.
09/589777

Seq. claims 1 & 3

FILE 'REGISTRY' ENTERED AT 10:57:57 ON 06 APR 2001
L1 17 S SYIVLCIE/SQSP

FILE 'CAPLUS' ENTERED AT 10:58:36 ON 06 APR 2001
L2 19 S L1

L2 ANSWER 1 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2001:208854 CAPLUS
DOCUMENT NUMBER: 134:217893
TITLE: Functional annotation of a full-length mouse cDNA collection
AUTHOR(S): Kawai, J.; Shingawa, A.; Shibata, K.; Yoshino, M.; Itoh, M.; Ishii, Y.; Arakawa, T.; Hara, A.; Funkunishi, Y.; Konno, H.; Adachi, J.; Fukuda, S.; Aizawa, K.; Izawa, M.; Nishi, K.; Kiyosawa, H.; Kondo, S.; Yamanaka, I.; Saito, T.; Okazaki, Y.; Gojobori, T.; Bono, H.; Kasukawa, T.; Saito, R.; Kadota, K.; Matsuda, H.; Ashburner, M.; Batalov, S.; Casavant, T.; Fleischmann, W.; Gaasterland, T.; Gissi, C.; King, B.; Kochiwa, H.; Kuehl, P.; Lewis, S.; Matsuo, Y.; Nikaido, I.; Pesole, G.; Quackenbush, J.; Schriml, L. M.; Staubli, F.; Suzuki, R.; Tomita, M.; Wagner, L.; Washio, T.; Sakai, K.; Okido, T.; Furuno, M.; Aono, H.; Baldarelli, R.; Barsh, G.; Blake, J.; Boffelli, D.; Bojunga, N.; Carninci, P.; de Bonaldo, M. F.; Brownstein, M. J.; Bult, C.; Fletcher, C.; Fujita, M.; Gariboldi, M.; Gustincich, S.; Hill, D.; Hofmann, M.; et al.
CORPORATE SOURCE: Lab. Genome Exploration Res. Group, RIKEN Genomic Sciences Center (GSC), Yokohama Inst., Yokohama, kanagawa, 230-0045, Japan
SOURCE: Nature (London) (2001), 409(6821), 685-690
CODEN: NATUAS; ISSN: 0028-0836
PUBLISHER: Nature Publishing Group
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The RIKEN Mouse Gene Encyclopaedia Project, a systematic approach to detg. the full coding potential of the mouse genome, involves collection and sequencing of full-length cDNAs and phys. mapping of the corresponding genes to the mouse genome. An international functional annotation meeting (FANTOM) was organized to annotate the first 21,076 cDNAs to be analyzed in this project. This report describes the first RIKEN clone collection, which is one of the largest described for any organism. Anal. of these cDNAs extends known gene families and identifies new ones. The sequences are deposited into GenBank with Accession nos. AK002213-AK021412 and AK027261-AK027262. Information about these clones is available at RIKEN (http://www.gsc.riken.go.jp/e/FANTOM/viewer/) and Mouse Genome

Informatics (http://www.informatics.jax.org and mirror sites). [This abstr. record is one of 7 records for this document necessitated by the large no. of index entries required to fully index the document and publication system constraints.].

IT **326629-20-3**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; functional annotation of a full-length mouse cDNA collection)

L2 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2001:154589 CAPLUS

TITLE: Functional annotation of a full-length mouse cDNA collection

AUTHOR(S): Kawai, J.; Shingaawa, A.; Shibata, K.; Yoshino, M.; Itoh, M.; Ishii, Y.; Aarakawa, T.; Hara, A.; Fukunishi, Y.; Konno, H.; Adcahi, J.; Fukuda, S.; Aizawa, K.; Izawa, M.; Nishi, K.; Kiyosawa, H.; Kondo, S.; Yamanaka, I.; Saito, T.; Okazaki, Y.; Gojobori, T.; Bono, H.; Kasukawa, T.; Saito, R.; Kadota, K.; Matsuda, H.; Ashburner, M.; Batalov, S.; Csavant, T.; Fleischmann, W.; Gaasterland, T.; Gissi, C.; King, B.; Kochiwa, H.; Kuehl, P.; Lewis, S.; Matsuo, Y.; Nikaido, I.; Pesole, G.; Quackenbush, J.; Schriml, L. M.; Staubli, F.; Suzuki, R.; Wagner, L.; Wagner, L.; Washio, T.; Sakai, K.; Okido, T.; Furuno, M.; Aono, H.; Baldarelli, R.; Barsh, G.; Blake, J.; Boffelli, D.; Bojunga, N.; Carninci, P.; de Bonaldo, M. F.; Brownstein, M. J.; Bult, C. fletcher, C.; Fujita, M.; Gariboldi, M.; Gustincichh, S.; Hill, D.; Hofmann, M.; Hume, D. A.; Kamiya, M.; Lee, N. H.; Lyons, P.; Marchionni, L.; Mashima, J.; Mazzarelli, J.; Mombaerts, P.; Nordone, P.; Ring, B.; Ringwald, M.; Mombaerts, P.; Rodriquez, I.; Sakamoto, N.; Sasaki, H.; Sato, K.; Schonbach, C.; Seya, T.; Shibata, Y.; Storch, K.-F.; Suzuki, H.; Toyo-oka, K.; Wang, K. H.; Weitz, C.; Whittaker, C.; Wilming, L.; Wynshaw-Boris, A.; Yoshida, K.; Hasegawa, Y.; Kawaji, H.; Kohtsuki, S.

CORPORATE SOURCE: Lab. Genome Explortaion Res. Group, RIKEN Genomic Sciences Center (GSC), Yokohama Inst., Yokohama, Kanagawa, 230-0045, Japan

SOURCE: Nature (London) (2001), 409(6821), 685-690
CODEN: NATUAS; ISSN: 0028-0836

PUBLISHER: Nature Publishing Group

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The RIKEN Mouse Gene Encyclopaedia Project, a systematic approach to detg. the full coding potential of the mouse genome, involves collection and sequencing of full-length cDNAs and phys. mapping of the corresponding genes to the mouse genome. An international functional annotation meeting (FANTOM) was organized to annotate the first 21,076 cDNAs to be analyzed in this project. This report describes the first RIKEN clone collection, which is one of the largest described for any organism. Anal. of these cDNAs extends known gene families and identifies new ones. The sequences are deposited into GenBank with Accession nos. AK002213-AK021412 and AK027261-AK027262. Information about these clones is available at RIKEN (http://www.gsc.riken.go.jp/e/FANTOM/viewer/) and Mouse Genome Informatics (http://www.informatics.jax.org and mirror sites). [This abstr. record is one of 7 records for this document necessitated by the large no. of index entries required to fully index the document and publication system constraints.].

IT **326629-20-3**
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(amino acid sequence; functional annotation of a full-length mouse cDNA collection)

L2 ANSWER 3 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2001:137393 CAPLUS
DOCUMENT NUMBER: 134:188970
TITLE: Adenoviral vectors including DNA sequences encoding angiogenic inhibitors
INVENTOR(S): Hallenbeck, Paul L.; Chen, Cheauyun Theresa
PATENT ASSIGNEE(S): Novartis A.-G., Switz.; Novartis-Erfindungen Verwaltungsgesellschaft m.b.H.
SOURCE: PCT Int. Appl., 59 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001012830	A1	20010222	WO 2000-EP7865	20000811

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,

BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.: US 1999-373938 19990813
AB An adenoviral vector which includes at least one DNA sequence encoding an angiogenic inhibitor, such as endostatin. Such vectors may be employed in treating diseases or disorders assocd. with angiogenesis, such as cancer, vascular diseases of the eye, including diabetic retinopathy, psoriasis, arthritis, cardiovascular disease, cerebral edema and Kasabach-Merritt syndrome. Recombinant adenoviral vectors encoding murine (or human endostatin) are constructed for making transgenic mice. Expression and secretion of murine endostatin and the functions of the secreted endostatin are studied from various disease models, including colon liver metastasis model, B16F10 lung metastasis model, B16F10 s.c. model, B16F10 melanoma lung metastasis model, and B16F10 melanoma s.c. model.
IT **326948-44-1**
RL: PRP (Properties)
(unclaimed protein sequence; adenoviral vectors including DNA sequences encoding angiogenic inhibitors)
REFERENCE COUNT: 7
REFERENCE(S): (1) Blezinger, P; NATURE BIOTECHNOLOGY 1999, V17(4), P343 CAPLUS
(2) Crystal, R; NATURE BIOTECHNOLOGY 1999, V17, P336 CAPLUS
(3) Feldman, A; WO 0068379 A 2000 CAPLUS
(4) Genetix Pharmaceuticals Inc; WO 9926480 A 1999 CAPLUS
(5) LI, H; WO 9849321 A 1998 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 4 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:814324 CAPLUS
DOCUMENT NUMBER: 134:505
TITLE: Antiangiogenic endostatin peptides, endostatin variants and methods of use
INVENTOR(S): Vuori, Kristiina
PATENT ASSIGNEE(S): The Burnham Institute, USA
SOURCE: PCT Int. Appl., 146 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000067771	A1	20001116	WO 2000-US12063	20000502

W: AE, AG, AL, AM, AT, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EE, EE, ES, FI,

FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-132907 19990506
US 1999-353333 19990714

AB The invention provides an endostatin peptide having at least 4-7 endostatin amino acid residues contg. substantially the amino acid sequence of RLQD, RAD, DGK/R, or a functional equiv. thereof. The invention also provides an endostatin variant contg. the amino acid sequence RGD, or a functional fragment thereof. Methods of inhibiting angiogenesis are also provided.

IT **307924-80-7**
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(antiangiogenic endostatin peptides, endostatin variants and methods of use)

IT **224308-23-0**
RL: PRP (Properties)
(unclaimed protein sequence; antiangiogenic endostatin peptides, endostatin variants and methods of use)

REFERENCE COUNT: 7
REFERENCE(S):
(1) Brooks; US 5753230 A 1998 CAPLUS
(2) Koivunen, E; Journal of Biological Chemistry 1993, V268(27), P20205 CAPLUS
(3) La Jolla Cancer Research Foundation; WO 9514714 A1 1995 CAPLUS
(4) Nutt; US 5061693 A 1991 CAPLUS
(5) Oh, S; Proc Natl Acad Sci USA 1994, V91, P4229 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 5 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:772677 CAPLUS
DOCUMENT NUMBER: 133:349140
TITLE: Compositions and methods for cancer treatment by selectively inhibiting VEGF
INVENTOR(S): Thorpe, Philip E.; Brekken, Rolf A.
PATENT ASSIGNEE(S): Board of Regents, the University of Texas System, USA
SOURCE: PCT Int. Appl., 297 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000064946	A2	20001102	WO 2000-US11367	20000428
WO 2000064946	A3	20010215		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-131432 19990428

AB Disclosed are antibodies that specifically inhibit VEGF binding to only one (VEGFR2) of the two VEGF receptors. The antibodies effectively inhibit angiogenesis and induce tumor regression, and yet have improved safety due to their specificity. The present invention thus provides new antibody-based compns., methods and combined protocols for treating cancer and other angiogenic diseases. Advantageous immunoconjugate and prodrug compns. and methods using the new VEGF-specific antibodies are also provided.

IT **304489-40-5DP**, immunoconjugates
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; immunoconjugates of anti-VEGF antibody for diagnosis and therapy of cancer and angiogenic disease)

L2 ANSWER 6 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:756746 CAPLUS
DOCUMENT NUMBER: 133:329588
TITLE: Endostatin-derived peptides exhibiting antiangiogenic activity
INVENTOR(S): Chillemi, Francesco; Francescato, Pierangelo; Ziche, Marina
PATENT ASSIGNEE(S): Universita' Degli Studi Di Milano, Italy; Universita' Degli Studi Di Firenze
SOURCE: PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2000063249 A1 20001026 WO 2000-EP3236 20000411
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.: IT 1999-MI777 19990415

AB Peptides with a sequence corresponding or homologous to that of endostatin, having inhibiting activity on angiogenesis, are useful in the treatment of angiogenesis-dependent tumors.

IT **303113-25-9P**
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(endostatin-derived peptides with antiangiogenic activity)

IT **303042-57-1DP**, resin-bound
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and reaction; endostatin-derived peptides with antiangiogenic activity)

REFERENCE COUNT: 4
REFERENCE(S):
(1) Beth Israel Deaconess Medical Center; WO 9929855 A 1999 CAPLUS
(2) The Children'S Medical Center Corporation; WO 9715666 A 1997 CAPLUS
(3) The Children'S Medical Center Corporation; EP 0857210 A 1998 CAPLUS
(4) The Children'S Medical Center Corporation & Yissum Research; WO 9948924 A 1999 CAPLUS

L2 ANSWER 7 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:707320 CAPLUS
DOCUMENT NUMBER: 133:292674
TITLE: Soluble recombinant endostatin
INVENTOR(S): Boice, Judith A.; Leiting, Barbara; O'Connell, John F.; Pompliano, David L.
PATENT ASSIGNEE(S): Merck & Co., Inc., USA
SOURCE: PCT Int. Appl., 58 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

WO 2000058498	A1	20001005	WO 2000-US8435	20000329

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 1999-126806 19990330
US 1999-128489 19990409

AB A method of making sol. recombinant endostatin in Escherichia coli is disclosed. Prepns. contg. the sol. recombinant endostatin are provided for the inhibition of angiogenesis or the treatment of cancer. Assays using the sol. recombinant endostatin are also provided. Thus, the structure of sol. endostatin prepd. by the method of the invention was detd. by NMR. The data indicated that endostatin exists in a monomeric form in soln. The NMR structure of zinc-contg. endostatin shows that the N.delta. imidazole nitrogen atoms of residues His-1, His-3, and His-11 are chelating the Zn2+.

IT **259789-72-5P**, Endostatin (mouse)
RL: BMF (Bioindustrial manufacture); BPN (Biosynthetic preparation); PUR (Purification or recovery); BIOL (Biological study); PREP (Preparation)
(sol. recombinant endostatin)

REFERENCE COUNT: 8

REFERENCE(S):
(1) Cohen, J; Science 1999, V283, P1250 CAPLUS
(2) Dhanabal; Cancer Research 1999, V59, P189 CAPLUS
(3) G D Searle & Co; WO 9942486 A1 1999 CAPLUS
(4) Kohno; Methods in Enzymology 1990, V185, P187 CAPLUS
(5) Lowe; Solubilisation, refolding and purification of eukaryotic proteins expressed in E coli in Protein purification 1987, P429 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 2000:434233 CAPLUS
DOCUMENT NUMBER: 133:79332
TITLE: Carrier-DNA complexes containing DNA encoding anti-angiogenic peptides and their use in gene therapy
INVENTOR(S): Mixson, A. James
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 30 pp., Cont.-in-part of U.S. 5,815,216.

CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6080728	A	20000627	US 1997-985526	19971205
EP 819758	A2	19980121	EP 1997-112154	19970716
EP 819758	A3	19980204		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
EP 921193	A1	19990609	EP 1998-100135	19980107
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11187886	A2	19990713	JP 1998-201996	19980716

PRIORITY APPLN. INFO.: US 1996-680845 19960716
EP 1997-112154 19970716
US 1997-985526 19971205

AB Carrier complexes comprising DNA encoding an anti-angiogenic gene or peptide and optionally a further DNA encoding a tumor suppressor protein are described. When administered to a subject bearing a tumor, the complexes can inhibit growth of the tumor.

IT **226938-38-1**, Endostatin (human fragment)
RL: PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(amino acid sequence; carrier-DNA complexes contg. DNA encoding anti-angiogenic peptides and their use in gene therapy)

REFERENCE COUNT: 40
REFERENCE(S):
(1) Anon; EP 0443404 A1 1991 CAPLUS
(2) Anon; WO 9202240 1992 CAPLUS
(3) Anon; WO 9316716 1993 CAPLUS
(4) Anon; WO 9316718 1993 CAPLUS
(5) Anon; WO 9529242 1995 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 9 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 2000:144909 CAPLUS
DOCUMENT NUMBER: 132:190503
TITLE: Expression and export of angiostatin and endostatin as immunofusins
INVENTOR(S): Lo, Kin-Ming; Li, Yue; Gillies, Stephen D.
PATENT ASSIGNEE(S): Lexingen Pharmaceuticals Corp., USA
SOURCE: PCT Int. Appl., 68 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000011033	A2	20000302	WO 1999-US19329	19990825
WO 2000011033	A3	20000622		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9955836	A1	20000314	AU 1999-55836	19990825
PRIORITY APPLN. INFO.:			US 1998-97883	19980825
			WO 1999-US19329	19990825

AB Disclosed are nucleotide sequences, for example, DNA or RNA sequences, which encode an Ig Fc-angiogenesis inhibitor fusion protein. The angiogenesis inhibitors can be angiostatin, endostatin, a plasminogen fragment having angiostatin activity, or a collagen XVIII fragment having endostatin activity. The nucleotide sequences can be inserted into a suitable expression vector and expressed in mammalian cells. Also disclosed is a family of Ig Fc-angiogenesis inhibitor fusion proteins that can be produced by expression of such nucleotide sequences. Also disclosed are methods using such nucleotide sequences and fusion proteins for treating conditions mediated by angiogenesis. When C57/BL6 mice with implanted Lewis lung tumors are injected with 720 .mu.g human Fc-human angiostatin fusion protein per mouse, the protein had a circulating half-life of about 32 h, and Western anal. shows that >90% of the fusion protein remains as an intact mol. in circulation.

IT **259789-72-5DP**, Endostatin (mouse), fusion products
RL: BPN (Biosynthetic preparation); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; expression and export of angiostatin and endostatin as immunofusins)

L2 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER:	2000:62891 CAPLUS
DOCUMENT NUMBER:	132:103744
TITLE:	Cloning of cDNA for human endostatin and use for inhibition of angiogenesis
INVENTOR(S):	Xu, Genxing; Ren, Mindong; Xu, Lin
PATENT ASSIGNEE(S):	Peop. Rep. China
SOURCE:	Faming Zhuanli Shenqing Gongkai Shuomingshu, 6 pp.

CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1177005	A	19980325	CN 1997-107112	19970910
CN 1060521	B	20010110		

AB Described is a method of cloning the cDNA for human liver endostatin by PCR using a pair of primers derived from the cDNA encoding human collagen type XVIII (1503-2055 cDNA fragment). Endostatin is useful for the treatment of tumors by inhibiting angiogenesis.

IT **255811-03-1**
RL: PRP (Properties)
(unclaimed sequence; cloning of cDNA for human endostatin and use for inhibition of angiogenesis)

L2 ANSWER 11 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:388287 CAPLUS
DOCUMENT NUMBER: 131:41277
TITLE: Mutants of endostatin, "em 1" having anti-angiogenic activity and methods of use thereof
INVENTOR(S): Sukhatme, Vikas P.
PATENT ASSIGNEE(S): Beth Israel Deaconess Medical Center, USA
SOURCE: PCT Int. Appl., 105 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9929855	A1	19990617	WO 1998-US26057	19981208
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, US, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9917180	A1	19990628	AU 1999-17180	19981208
EP 1037983	A1	20000927	EP 1998-962006	19981208
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,				

PT, IE, FI

PRIORITY APPLN. INFO.: US 1997-67888 19971208
US 1998-82663 19980422
US 1998-108536 19981116
WO 1998-US26057 19981208

AB Described herein are novel mutants of endostatin, one of which, designated "EM 1", has anti-angiogenic activity similar or superior to that of wild type endostatin. The invention relates to the discovery of an isolated anti-angiogenic peptide, wherein the C-terminal end of the peptide comprises the amino acid sequence SYIVLCIE, which has anti-angiogenic properties. Designated "EM 1", this protein comprises a mutated endostatin protein, where the mutation comprises a deletion of nine consecutive amino acids from the C-terminus of the mutated endostatin protein (e.g., NSFMTSFSK). EM 1 terminates in the amino acid sequence SYIVLCIE. The invention also comprises isolated polynucleotides encoding EM 1, operably linked to expression sequence, and host cells transformed with such a construct. Antibodies to EM 1 are also disclosed. The invention also relates to processes for producing EM 1, fusion proteins contg. EM 1, and compns. comprising EM 1 or fusion products thereof. The invention also discloses methods of producing polypeptides encoding EM 1.

IT **224308-23-0**
RL: BAC (Biological activity or effector, except adverse); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(mutants of endostatin, "em 1" having anti-angiogenic activity and methods of use thereof)

REFERENCE COUNT: 8
REFERENCE(S):
(1) Boehm, T; Biochemical and Biophysical Research Communications 1998, V252, P190 CAPLUS
(2) Dhanabal, M; Cancer Research 1999, V59, P189 CAPLUS
(3) Ding, Y; Proc Natl Acad Sci USA 1998, V95, P10443 CAPLUS
(5) Hohenester, E; The EMBO Journal 1998, V17(6), P1656 CAPLUS
(7) O'Reilly, M; Cell 1997, V88(2), P277 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:375339 CAPLUS
DOCUMENT NUMBER: 131:28626
TITLE: Delivery of anti-angiogenic genes to a tumor in vivo and their use in gene therapy
INVENTOR(S): Mixson, Archibald James
PATENT ASSIGNEE(S): USA
SOURCE: Eur. Pat. Appl., 46 pp.

CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 921193	A1	19990609	EP 1998-100135	19980107
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
US 6080728	A	20000627	US 1997-985526	19971205
PRIORITY APPLN. INFO.:			US 1997-985526	19971205
			US 1996-680845	19960716
			EP 1997-112154	19970716

AB The invention relates to the delivery of anti-angiogenic genes or DNA encoding anti-angiogenic peptides to a tumor in vivo, preferably by injection, and expression of the DNA in order to inhibit tumoral growth. Provided are carrier:DNA complexes which comprise cationic polymers or cationic liposomes and DNA encoding at least one anti-angiogenic protein/peptide, optionally together with further DNA encoding a tumor suppressor protein, esp. p53. When administered to a subject bearing a tumor, the complexes can inhibit growth of the tumor.

IT **226938-38-1P**, Endostatin (human fragment)
RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(amino acid sequence; delivery of anti-angiogenic genes to a tumor in vivo and their use in gene therapy)

REFERENCE COUNT: 6
REFERENCE(S):
(1) Chiron Viagene Inc; WO 9621416 A 1996 CAPLUS
(2) Lesoon-Wood, L; Human Gene Therapy 1995, V6(4), P395 CAPLUS
(3) Mixson, A; EP 0819758 A 1998 CAPLUS
(4) The Children's Medical Center Corporation; WO 9529242 A 1995 CAPLUS
(5) Weinstat-Saslow, D; Cancer Research 1994, V54, P6504 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 13 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:354395 CAPLUS
DOCUMENT NUMBER: 130:357142
TITLE: Anti-angiogenic gene therapy vectors and their use in treating angiogenesis-related diseases
INVENTOR(S): Leboulch, Philippe; Pawliuk, Robert James; Bachelot, Thomas
PATENT ASSIGNEE(S): Genetix Pharmaceuticals, Inc., USA;

Massachusetts Institute of Technology
SOURCE: PCT Int. Appl., 83 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9926480	A1	19990603	WO 1998-US24950	19981120
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9915985	A1	19990615	AU 1999-15985	19981120
PRIORITY APPLN. INFO.:			US 1997-975424	19971120
			WO 1998-US24950	19981120

AB A method for inhibiting tumor growth in a human patient harboring a solid tumor, said method comprising administering to said patient a nucleic acid mol. which expresses in said patient an anti-angiogenic polypeptide selected from the group consisting of human angiostatin, murine angiostatin, human endostatin, murine endostatin, and angiogenesis-inhibiting fragments thereof, wherein expression of the anti-angiogenic polypeptide in the patient inhibits angiogenesis in the vicinity of the tumor and/or systemically by diffusion of the recombinant protein to the vascular compartment from secreting transduced cells, thereby inhibiting its growth.

IT **224308-23-0**, Endostatin mouse
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(nucleic acid encoding; anti-angiogenic gene therapy vectors and their use in treating angiogenesis-related diseases)

REFERENCE COUNT: 10
REFERENCE(S):
(1) Abbott Laboratories; WO 97/41824 A2 1997 CAPLUS
(2) O'Reilly; US 5792845 A 1998 CAPLUS
(3) O'Reilly; Cell 1997, V88, P277 CAPLUS
(4) O'Reilly; Nature Medicine 1996, V2(6), P689 CAPLUS
(5) Rhone-Poulenc Rorer; WO 98/49321 A2 1998 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2001 ACS

ACCESSION NUMBER: 1999:134195 CAPLUS
DOCUMENT NUMBER: 130:332418
TITLE: Antiangiogenic Activity of Restin, NC10 Domain of Human Collagen XV: Comparison to Endostatin
AUTHOR(S): Ramchandran, Ramani; Dhanabal, Mohanraj; Volk, Ruediger; Waterman, Matthew J. F.; Segal, Mark; Lu, Hua; Knebelmann, Bertrand; Sukhatme, Vikas P.
CORPORATE SOURCE: Renal Div., Dep. Med., Beth Israel Deaconess Med. Cent., Harvard Med. Sch., Boston, MA, 02215, USA
SOURCE: Biochem. Biophys. Res. Commun. (1999), 255(3), 735-739
CODEN: BBRCA9; ISSN: 0006-291X
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Based on a homol. search with endostatin, the C-terminus 185 aa of collagen XVIII, the authors report the cloning, expression, and antiangiogenic activity of a 22 kDa human collagen XV fragment, that the authors have named restin. Restin was expressed in the prokaryotic pET expression system. The authors have shown that restin inhibits the migration of endothelial cells in vitro but has no effect on the proliferation of these cells. A polyclonal antibody raised against endostatin cross-reacted with restin. Systemic administration of restin suppressed the growth of tumors in a xenograft renal carcinoma model. (c) 1999 Academic Press.

IT **224308-23-0**
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(amino acid sequence; antiangiogenic activity of NC10 domain of human collagen XV restin in comparison to endostatin in relation to antitumor activity)

REFERENCE COUNT: 13
REFERENCE(S):
(1) Angiolillo, A; J Exp Med 1995, V182, P155 CAPLUS
(2) Boehm, T; Nature 1997, V390, P404 CAPLUS
(3) Corpet, F; Nucleic Acids Res 1988, V16, P10881 CAPLUS
(5) Folkman, J; Mol Med 1995, V1, P120 CAPLUS
(6) Folkman, J; Science 1987, V235, P442 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 15 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1997:510181 CAPLUS
DOCUMENT NUMBER: 127:146308
TITLE: Collagen type .alpha.1 (XVIII): a novel member of the collagen family and its properties and uses
Searcher : Shears 308-4994

INVENTOR(S): Olsen, Bjorn R.; Oh, Suk P.
PATENT ASSIGNEE(S): President and Fellows of Harvard College, USA
SOURCE: U.S., 35 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5643783	A	19970701	US 1993-159784	19931201

AB A novel collagen, type .alpha.1 (XVIII), is identified and characterized for therapeutic use. The protein can be conjugated with glycosaminoglycans and used as a carrier for proteins such as fibroblast growth factor (no data) or it can be used as a connective tissue filler in plastic surgery and dermatol. (no data). CDNAs encoding the mouse and human proteins are cloned and antibodies are raised against it. A cDNA for the mouse type .alpha.1 (XVIII) was cloned by screening com. fetal mouse cDNA libraries with probes derived from a type XII collagen. These clones were used to identify a clone for a human type .alpha.1 (XVIII) collagen. The domain organization of type .alpha.1 (XVIII) and of type .alpha.1(XV) is different from that of other collagens.

IT **193227-36-0**
RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(amino acid sequence; collagen type .alpha.1 (XVIII): novel member of collagen family and its properties and uses)

L2 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1996:185568 CAPLUS
DOCUMENT NUMBER: 124:252313
TITLE: Characterization of the mouse gene for the .alpha.1 chain of type XVIII collagen (Col18a1) reveals that the three variant N-terminal polypeptide forms are transcribed from two widely separated promoters
AUTHOR(S): Rehn, Marko; Hintikka, Elina; Pihlajaniemi, Taina
CORPORATE SOURCE: Collagen Res. Unit, Univ. Oulu, Oulu, FIN-90220, Finland
SOURCE: Genomics (1996), 32(3), 436-46
CODEN: GNMCEP; ISSN: 0888-7543
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The mouse gene for the .alpha.1 chain of type XVIII collagen (Col18a1) is more than 102 kb and consists of 43 exons. Type XVIII collagen transcripts encode polypeptides that differ with respect to

three variant N-terminal noncollagenous domains that are 301 (NC1-301), 517 (NC1-517), or 764 (NC1-764) residues in length. Characterization of genomic clones revealed that the three variant NC1 domains result from the use of two alternative promoters, sepd. by a distance of 50 kb. The upstream promoter, promoter 1, directs the synthesis of the NC1-301 domain in conjunction with exons 1 and 2, whereas the downstream promoter, promoter 2, directs that of the NC1-517 and NC1-764 domains in conjunction with exon 3, with the latter two variants differing with respect to alternative splicing of the exon 3 sequences. Exons 4-9 encode a portion of the NC1 domain shared by all three polypeptide variants, and exons 9-43 encode the common collagenous and C-terminal noncollagenous sequences. The marked differences previously obsd. in the expression of variant type XVIII collagen transcripts in mouse tissues thus result from tissue-specific use of these two promoters.

IT **175337-10-7 175337-11-8 175337-12-9**
RL: BOC (Biological occurrence); PRP (Properties); BIOL (Biological study); OCCU (Occurrence)
(amino acid sequence; characterization of the mouse gene for the .alpha.1 chain of type XVIII collagen (Col18a1) reveals that the three variant N-terminal polypeptide forms are transcribed from two widely sepd. promoters)

L2 ANSWER 17 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1994:476556 CAPLUS
DOCUMENT NUMBER: 121:76556
TITLE: Isolation and sequencing of cDNAs for proteins with multiple domains of Gly-Xaa-Yaa repeats identify a distinct family of collagenous proteins
AUTHOR(S): Oh, Suk Paul; Kamagata, Yusuke; Muragaki, Yasuteru; Timmons, Sheila; Ooshima, Akira; Olsen, Bjorn R.
CORPORATE SOURCE: Dep. Cell Biology, Harvard Med. Sch., Boston, MA, 02115, USA
SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1994), 91(10), 4229-33
CODEN: PNASA6; ISSN: 0027-8424
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Overlapping mouse cDNAs were isolated encoding a collagenous polypeptide designated .alpha.1(XVIII) collagen. Nucleotide sequence anal. shows that .alpha.1(XVIII) collagen contains 10 triple-helical domains sepd. and flanked by non-triple-helical regions. Within the non-triple-helical regions, there are several Ser-Gly-contg. sequences that conform to consensus sequences for glycosaminoglycan attachment sites in proteoglycan core proteins. Northern blots show that .alpha.1(XVIII) transcripts are present in multiple organs, with the highest levels in liver, lung, and kidney.

Also, overlapping cDNAs were isolated encoding human .alpha.1(XV) collagen, and their sequence extends a published partial .alpha.1(XV) sequence to the 3' end. Comparison of the .alpha.1(XV) and .alpha.1(XVIII) sequences reveals a striking similarity in the lengths of the 6 most C-terminal triple-helical domains. In addn., within the carboxy non-triple-helical domain NC1 of the 2 chains, a region of 177 amino acid residues shows .apprx.60% identity at the amino acid level. It is suggested, therefore, that .alpha.1(XV) and .alpha.1(XVIII) collagens are structurally related. Their structure is different from that of other known collagen types. Evidently, that they belong to a subfamily of extracellular matrix proteins and the designation multiplexins (for protein with multiple triple-helix domains and interruptions) is suggested for members of this subfamily.

IT **156655-88-8**, Collagen (mouse clones mc19/mcE4/mc3 .alpha.1(SVIII)-chain fragment)
RL: BIOL (Biological study)
(amino acid sequence and domain structure of)

L2 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1994:428272 CAPLUS
DOCUMENT NUMBER: 121:28272
TITLE: Primary structure of the .alpha.1 chain of mouse type XVIII collagen, partial structure of the corresponding gene, and comparison of the .alpha.1(XVIII) chain with its homolog, the .alpha.1(XV) collagen chain
AUTHOR(S): Rehn, Marko; Hintikka, Elina; Pihlajaniemi, Taina
CORPORATE SOURCE: Biocent., Univ. Oulu, Oulu, FIN-90220, Finland
SOURCE: J. Biol. Chem. (1994), 269(19), 13929-35
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors have isolated cDNAs that complete the elucidation of the primary structure of the mouse .alpha.1(XVIII) collagen chain, a polypeptide homologous to the .alpha.1(XV) collagen chain. The 1315-residue .alpha.1(XVIII) chain includes a 25-residue signal peptide, a 301-residue NH2-terminal non-collagenous domain (NC1), a 674-residue collagenous sequence with nine interruptions of 10-24 residues, and a 315-residue COOH-terminal noncollagenous domain (NC11). Seven of the collagenous domains and both flanking noncollagenous domains share homol. with the .alpha.1(XV) chain. The COOH-terminal noncollagenous domains are unique to the .alpha.1(XVIII) and .alpha.1(XV) chains, and they contain a homologous beginning, a variable portion, and a highly homologous COOH-terminal half with 4 conserved cysteines. The differences in the collagenous sequences probably preclude the existence of the two chains in the same mol., however. A 12.5-kilobase pair genomic

sequence was found to contain the 12 extreme 3'-exons of the .alpha.1(XVIII) gene, covering 40% of the coding sequences. Exons start with either a complete codon or a split codon for the glycines of Gly-Xaa-Yaa repeats, and seven exons completely cover the NC11 domain. Comparison of the sequences encoded by these seven exons with the corresponding region of the .alpha.1(XV) gene indicated conserved exon-intron organization, suggesting that the two genes derived from a common ancestor.

IT **155982-66-4**, Collagen .alpha.1 chain (mouse clone MM-103 gene COL18A1 type XVIII C-terminal fragment)
RL: PRP (Properties)
(amino acid sequence of)

L2 ANSWER 19 OF 19 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1994:292270 CAPLUS
DOCUMENT NUMBER: 120:292270
TITLE: Identification of a novel collagen chain represented by extensive interruptions in the triple-helical region
AUTHOR(S): Abe, Nobuhiro; Muragaki, Yasuteru; Hoshioka, Hidekatsu; Inoue, Hajime; Ninomiya, Yoshifumi
CORPORATE SOURCE: Med. Sch., Okayama Univ., Okayama, 700, Japan
SOURCE: Biochem. Biophys. Res. Commun. (1993), 196(2), 576-82
CODEN: BBRCA9; ISSN: 0006-291X
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The authors have isolated mouse cDNA clones that encode a newly discovered collagenous polypeptide. Four overlapping cDNA clones contained an open reading frame of 1140 amino acid residues of collagenous and non-collagenous domains. The predicted polypeptide consists of 10 collagenous domains of various length that are interrupted by 11 noncollagenous domains. The overall structural arrangement differed significantly from reported collagen chains of 17 different types. Northern-blot analyses showed hybridization of the cDNA to 5.6kb and 4.8kb mRNA species in liver and kidney that are due to utilization of the two poly (A) signals.

IT **152924-73-7**
RL: PRP (Properties)
(amino acid sequence of, extensive interruptions in the triple-helical region in relation to)

E18 THROUGH E34 ASSIGNED

FILE 'REGISTRY' ENTERED AT 10:59:43 ON 06 APR 2001
L3 17 SEA FILE=REGISTRY ABB=ON PLU=ON (224308-23-0/BI OR 226938-38-1/BI OR 259789-72-5/BI OR 326629-20-3/BI OR 152924-73-7/BI OR 155982-66-4/BI OR 156655-88-8/BI OR 175337-10-7/BI OR 175337-11-8/BI OR 175337-12-9/BI OR

193227-36-0/BI OR 255811-03-1/BI OR 303042-57-1/BI OR
303113-25-9/BI OR 304489-40-5/BI OR 307924-80-7/BI OR
326948-44-1/BI)

L4 17 L1 AND L3

=> d 1-17 .bevreg1

L4 ANSWER 1 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **326948-44-1** REGISTRY
CN 13: PN: WO0112830 SEQID: 12 unclaimed protein (9CI) (CA INDEX NAME)
CI MAN
SQL 207

SEQ 1 METDTLLLWV LLLWVPGSTG DAAHTHQDFQ PVLHLVALNT PLSGGMRGIR
51 GADFQCFQQA RAVGLSGTFR AFLSSRLQDL YSIVRRADRG SVPIVNLKDE
101 VLSPSWDSLF SGSQGQVQPG ARIFSFDGRD VLRHPAWPQK SVWHGSDPSG
151 RRLMESYCET WRTETTGATG QASSLLSGRL LEQKAASCHN SYIVLCIENS
========
201 FMTSFSK
HITS AT: 191-198

REFERENCE 1: 134:188970

L4 ANSWER 2 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **326629-20-3** REGISTRY
CN Protein (mouse strain C57BL/6J clone 3200001M10 160-amino acid)
(9CI) (CA INDEX NAME)
OTHER NAMES:
CN GenBank AK014292-derived protein GI 12852042
CI MAN
SQL 160

SEQ 1 GIRGADFQCF QQARAVGLSG TFRAFLSSRL QDLYSIVRRA DRGSVPIVNL
51 KDEVLSPSWD SLFSGSQGQL QPGARIFSFD GRDVLRHPAW PQKSVWHGSD
101 PSGRRLMESY CETWRTETTG ATGQASSLLS GRLLEQKAAS CHNSYIVLCI
=======
151 ENSFMTSFSK
=
HITS AT: 144-151

L4 ANSWER 3 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **307924-80-7** REGISTRY
CN L-Methionine, L-.alpha.-glutamyl-L-seryl-L-tyrosyl-L-cysteinyl-L-
.alpha.-glutamyl-L-threonyl-L-tryptophyl-L-arginyl-L-threonyl-L-
.alpha.-glutamyl-L-threonyl-L-threonylglycyl-L-alanyl-L-
threonylglycyl-L-glutaminyl-L-alanyl-L-seryl-L-seryl-L-leucyl-L-
leucyl-L-serylglycyl-L-arginyl-L-leucyl-L-leucyl-L-.alpha.-glutamyl-
L-glutaminyl-L-lysyl-L-alanyl-L-alanyl-L-seryl-L-cysteinyl-L-

histidyl-L-asparaginyl-L-seryl-L-tyrosyl-L-isoleucyl-L-valyl-L-leucyl-L-cysteinyl-L-isoleucyl-L-.alpha.-glutamyl-L-asparaginyl-L-seryl-L-phenylalanyl- (9CI) (CA INDEX NAME)

OTHER NAMES:
CN 11: PN: WO0067771 SEQID: 21 claimed protein
CI MAN
SQL 48

SEQ 1 ESYCETWRTE TTGATGQASS LLSGRLLEQK AASCHNSYIV LCIENSFM
==== ====

HITS AT: 37-44

REFERENCE 1: 134:505

L4 ANSWER 4 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **304489-40-5** REGISTRY
CN Peptide (synthetic clone H6PQE60 histidine tag) fusion protein with endostatin (mouse) (9CI) (CA INDEX NAME)

OTHER NAMES:
CN 44: PN: WO0064247 SEQID: 13 claimed protein
CN 49: PN: WO0064247 SEQID: 13 claimed protein
CI MAN
SQL 191

SEQ 1 MHHHHHHHTH QDFQPVLHLV ALNTPLSGGM RGIRGADFQC FQQARAVGLS
51 GTFRAFLSSR LQDLYSIVRR ADRGSVPIVN LKDEVLSPSW DSLFSGSQGQ
101 LQPGARIFSF DGRDVLRHPA WPQKSVWHGS DPSGRRLMES YCETWRTETT
151 GATGQASSLL SGRLLEQKAA SCHNSYIVLC IENSFMTSFS K
====== ==

HITS AT: 175-182

REFERENCE 1: 133:349140

L4 ANSWER 5 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **303113-25-9** REGISTRY
CN L-Lysine, L-cysteinyl-L-.alpha.-glutamyl-L-threonyl-L-tryptophyl-L-arginyl-L-threonyl-L-.alpha.-glutamyl-L-threonyl-L-threonylglycyl-L-alanyl-L-threonylglycyl-L-glutaminyl-L-alanyl-L-seryl-L-seryl-L-leucyl-L-leucyl-L-serylglycyl-L-arginyl-L-leucyl-L-leucyl-L-.alpha.-glutamyl-L-glutaminyl-L-lysyl-L-alanyl-L-alanyl-L-seryl-L-cysteinyl-L-histidyl-L-asparaginyl-L-seryl-L-tyrosyl-L-isoleucyl-L-valyl-L-leucyl-S-(1,1-dimethylethyl)-L-cysteinyl-L-isoleucyl-L-.alpha.-glutamyl-L-asparaginyl-L-seryl-L-phenylalanyl-L-methionyl-L-threonyl-L-seryl-L-phenylalanyl-L-seryl-, cyclic (1.fwdarw.31)-disulfide (9CI) (CA INDEX NAME)

OTHER NAMES:
CN 4: PN: WO0063249 SEQID: 4 claimed protein
CI MAN
SQL 50

SEQ 1 CETWRTETTG ATGQASSLLS GRLLEQKAAS CHNSYIVLCI ENSFMTSFSK
=======

HITS AT: 34-41

REFERENCE 1: 133:329588

L4 ANSWER 6 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **303042-57-1** REGISTRY
CN L-Lysine, S-(triphenylmethyl)-L-cysteinyl-L-.alpha.-glutamyl-O-(1,1-dimethylethyl)-L-threonyl-1-[(1,1-dimethylethoxy)carbonyl]-L-tryptophyl-N5-[[[(2,3-dihydro-2,2,4,6,7-pentamethyl-5-benzofuranyl)sulfonyl]amino]iminomethyl]-L-ornithyl-O-(1,1-dimethylethyl)-L-threonyl-L-.alpha.-glutamyl-O-(1,1-dimethylethyl)-L-threonyl-O-(1,1-dimethylethyl)-L-threonylglycyl-L-alanyl-O-(1,1-dimethylethyl)-L-threonylglycyl-L-glutaminyl-L-alanyl-O-(1,1-dimethylethyl)-L-seryl-O-(1,1-dimethylethyl)-L-seryl-L-leucyl-L-leucyl-O-(1,1-dimethylethyl)-L-serylglycyl-N5-[[[(2,3-dihydro-2,2,4,6,7-pentamethyl-5-benzofuranyl)sulfonyl]amino]iminomethyl]-L-ornithyl-L-leucyl-L-leucyl-L-.alpha.-glutamyl-L-glutaminyl-N6-[(1,1-dimethylethoxy)carbonyl]-L-lysyl-L-alanyl-L-alanyl-O-(1,1-dimethylethyl)-L-seryl-S-(triphenylmethyl)-L-cysteinyl-1-(triphenylmethyl)-L-histidyl-L-asparaginyl-O-(1,1-dimethylethyl)-L-seryl-O-(1,1-dimethylethyl)-L-tyrosyl-L-isoleucyl-L-valyl-L-leucyl-S-(1,1-dimethylethyl)-L-cysteinyl-L-isoleucyl-L-.alpha.-glutamyl-L-asparaginyl-O-(1,1-dimethylethyl)-L-seryl-L-phenylalanyl-L-methionyl-O-(1,1-dimethylethyl)-L-threonyl-O-(1,1-dimethylethyl)-L-seryl-L-phenylalanyl-O-(1,1-dimethylethyl)-L-seryl-, 2,7,25,41-tetrakis(1,1-dimethylethyl) ester (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 8: PN: WO0063249 SEQID: 8 claimed sequence
CI MAN
SQL 50

SEQ 1 CETWRTETTG ATGQASSLLS GRLLEQKAAS CHNSYIVLCI ENSFMTSFSK
=======

HITS AT: 34-41

REFERENCE 1: 133:329588

L4 ANSWER 7 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **259789-72-5** REGISTRY
CN Endostatin (mouse) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN 18: PN: WO0011033 SEQID: 18 claimed protein
CI MAN
SQL 184

SEQ 1 HTHQDFQPVL HLVALNTPLS GGMRGIRGAD FQCFQQARAV GLSGTFRAFL

```
        51 SSRLQDLYSI VRRADRGSVP IVNLKDEVLS PSWDSLFSGS QGQVQPGARI
       101 FSFDGRDVLR HPAWPQKSVW HGSDPSGRRL MESYCETWRT ETTGATGQAS
       151 SLLSGRLLEQ KAASCHNSYI VLCIENSFMT SFSK
                                === =====
HITS AT:    168-175

REFERENCE   1:  133:292674

REFERENCE   2:  132:190503

L4   ANSWER 8 OF 17  REGISTRY  COPYRIGHT 2001 ACS
RN   255811-03-1  REGISTRY
CN   4: PN: CN1177005 PAGE: 4 unclaimed sequence (9CI)  (CA INDEX NAME)
CI   MAN
SQL  181

SEQ      1 HTHQDFQPVL HLVALNTPLS GGMRGIRGAD FQCFQQARAV GLSGTFRAFL
        51 SSRLQDLYSI VRRADRGSVP IVNLKDEVLS PSWDSLFSGS QGQVQPGARI
       101 FSFDGRDVLR HPAWPQKSVW HGSDPSGRRL MESYCETWRT ETTGATGQAS
       151 SLLSGRLLEQ KAASCHNSYI VLCIENSFMT X
                                === =====
HITS AT:    168-175

REFERENCE   1:  132:103744

L4   ANSWER 9 OF 17  REGISTRY  COPYRIGHT 2001 ACS
RN   226938-38-1  REGISTRY
CN   Endostatin (human fragment) (9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   31: PN: US6080728 SEQID: 36 claimed protein
CN   Endostatin (synthetic 185-amino acid fragment)
CI   MAN
SQL  185

SEQ      1 MHTHQDFQPV LHLVALNTPL SGGMRGIRGA DFQCFNNARV GLSGTFRAFL
        51 SSRLQDLYSI VRRADRGSVP IVQNLRDEVL SPSWDSLFSG SQGQLQPGAR
       101 IFSFDGRDVL RHPAWPQRSV WHGSDPSGRR LMESYCETWR TETTGATGQA
       151 SSLLSGRLLE QRAASCHDSY IVLCIENSFM TSFSR
                                == ======
HITS AT:    169-176

REFERENCE   1:  133:79332

REFERENCE   2:  131:28626

L4   ANSWER 10 OF 17  REGISTRY  COPYRIGHT 2001 ACS
RN   224308-23-0  REGISTRY
CN   957-1140-Collagen (mouse clone NA1/NA12/NA2611/NA286 reduced) (9CI)
     (CA INDEX NAME)
```

Same as EM1

OTHER NAMES:
CN 4: PN: WO0067771 SEQID: 4 unclaimed protein
CN Endostatin (mouse)
CI MAN
SQL 184

SEQ 1 HTHQDFQPVL HLVALNTPLS GGMRGIRGAD FQCFQQARAV GLSGTFRAFL
51 SSRLQDLYSI VRRADRGSVP IVNLKDEVLS PSWDSLFSGS QGQLQPGARI
101 FSFDGRDVLR HPAWPQKSVW HGSDPSGRRL MESYCETWRT ETTGATGQAS
151 SLLSGRLLEQ KAASCHNSYI VLCIENSFMT SFSK
=== =====

HITS AT: 168-175

REFERENCE 1: 134:505

REFERENCE 2: 131:41277

REFERENCE 3: 130:357142

REFERENCE 4: 130:332418

L4 ANSWER 11 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **193227-36-0** REGISTRY
CN Collagen (mouse type .alpha.1(XVIII) 1288-amino acid fragment) (9CI)
(CA INDEX NAME)
CI MAN
SQL 1288

SEQ 1 ENVAEEVGLL QLLGDPLPEK ISQIDDPHVG PAYIFGPDSN SGQVAQYHFP
51 KLFFRDFSLL FHVRPATEAA GVLFAITDAA QVVVSLGVKL SEVRDGQQNI
101 SLLYTEPGAS QTQTGASFRL PAFVGQWTHF ALSVDGGSVA LYVDCEEFQR
151 VPFARASQGL ELERGAGLFV GQAGTADPDK FQGMISELKV RKTPRVSPVH
201 CLDEEDDDED RASGDFGSGF EESSKSHKED TSLLPGLPQP PPVTSPPLAG
251 GSTTEDPRTE ETEEDAAVDS IGAETLPGTG SSGAWDEAIQ NPGRGLIKGG
301 MKGQKGEPGA QGPPGPAGPQ GPAGPVVQSP NSQPVPGAQG PPGPQGPPGK
351 DGTPGRDGEP GDPGEDGRPG DTGPQGFPGT PGDVGPKGEK GDPGIGPRGP
401 PGPPGPPGPS FRQDKLTFID MEGSGFSGDI ESLRGPRGFP GPPGPPGVPG
451 LPGEPGRFGI NGSYAPGPAG LPGVPGKEGP PGFPGPPGPP GPPGKEGPPG
501 VAGQKGSVGD VGIPGPKGSK GDLGPIGMPG KSGLAGSPGP VGPPGPPGPP
551 GPPGPGFAAG FDDMEGSGIP LWTTARSSDG LQGPPGSPGL KGDPGVAGLP
601 GAKGEVGADG AQGIPGPPGR EGAAGSPGPK GEKGMPGEKG NPGKDGVGRP
651 GLPGPPGPPG PVIYVSSEDK AIVSTPGPEG KPGYAGFPGP AGPKGDLGSK
701 GEQGLPGPKG EKGEPGTIFS PDGRALGHPQ KGAKGEPGFR GPPGPYGRPG
751 HKGEIGFPGR PGRPGTNGLK GEKGEPGDAS LGFSMRGLPG PPGPPGPPGP
801 PGMPIYDSNA FVESGRPGLP GQQGVQGPSG PKGDKGEVGP PGPPGQFPID
851 LFHLEAEMKG DKGDRGDAGQ KGERGEPGAP GGGFFSSSVP GPPGPPGYPG
901 IPGPKGESIR GPPGPPGPQG PPGIGYEGRQ GPPGPPGPPG PPSFPGPHRQ
951 TVSVPGPPGP PGPPGPPGAM GASAGQVRIW ATYQTMLDKI REVPEGWLIF
1001 VAEREELYVR VRNGFRKVLL EARTALLRGT GNEVAAFQPP LVQLHEGSPY
Searcher : Shears 308-4994

```
1051 TRREYSYSTA RPWRADDILA NPPRLPDRQP YPGVPHHHSS YVHLPPARPT
1101 LSLAHTHQDF QPVLHLVALN TPLSGGMRGI RGADFQCFQQ ARAVGLSGTF
1151 RAFLSSRLQD LYSIVRRADR GSVPIVNLKD EVLSPSWDSL FSGSQGQVQP
1201 GARIFSFDGR DVLRHPAWPQ KSVWHGSDPS GRRLMESYCE TWRTETTGAT
1251 GQASSLLSGR LLEQKAASCH NSYIVLCIEN SFMTSFSK
                         ========
```

Same as EM1 Fig. 2

184 a.a

HITS AT: 1272-1279

REFERENCE 1: 127:146308

L4 ANSWER 12 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **175337-12-9** REGISTRY
CN Collagen (mouse clone P13124/GEN19/K17.6 type XVIII gene Col18a1 .alpha.1-chain 1527-amino acid isoform precursor reduced) (9CI) (CA INDEX NAME)
CI MAN
SQL 1527

SEQ

```
   1 MAPDPSRRLC LLLLLLLSCR LVPASADGNS LSPLNPLVWL WPPKTSDSLE
  51 GPVSKPQNSS PVQSTENPTT HVVPQDGLTE QQTTPASSEL PPEEEEEEDQ
 101 KAGQGGSPAT PAVPIPLVAP AASPDMKEEN VAGVGAKILN VAQGIRSFVQ
 151 LWDEDSTIGH SAGTEVPDSS IPTVLPSPAE LSSAPQGSKT TLWLSSAIPS
 201 SPDAQTTEAG TLAVPTQLPP FQSNLQAPLG RPSAPPDFPE NVAEEVGLLQ
 251 LLGDPLPEKI SQIDDPHVGP AYIFGPDSNS GQVAQYHFPK LFFRDFSLLF
 301 HVRPATEAAG VLFAITDAAQ VVVSLGVKLS EVRDGQQNIS LLYTEPGASQ
 351 TQTGASFRLP AFVGQWTHFA LSVDGGSVAL YVDCEEFQRV PFARASQGLE
 401 LERGAGLFVG QAGTADPDKF QGMISELKVR KTPRVSPVHC LDEEDDDEDR
 451 ASGDFGSGFE ESSKSHKEDT SLLPGLPQPP PVTSPPLAGG STTEDPRTEE
 501 TEEDAAVDSI GAETLPGTGS SGAWDEAIQN PGRGLIKGGM KGQKGEPGAQ
 551 GPPGPAGPQG PAGPVVQSPN SQPVPGAQGP PGPQGPPGKD GTPGRDGEPG
 601 DPGEDGRPGD TGPQGFPGTP GDVGPKGEKG DPGIGPRGPP GPPGPPGPSF
 651 RQDKLTFIDM EGSGFSGDIE SLRGPRGFPG PPGPPGVPGL PGEPGRFGIN
 701 GSYAPGPAGL PGVPGKEGPP GFPGPPGPPG PPGKEGPPGV AGQKGSVGDV
 751 GIPGPKGSKG DLGPIGMPGK SGLAGSPGPV GPPGPPGPPG PPGPGFAAGF
 801 DDMEGSGIPL WTTARSSDGL QGPPGSPGLK GDPGVAGLPG AKGEVGADGA
 851 QGIPGPPGRE GAAGSPGPKG EKGMPGEKGN PGKDGVGRPG LPGPPGPPGP
 901 VIYVSSEDKA IVSTPGPEGK PGYAGFPGPA GPKGDLGSKG EQGLPGPKGE
 951 KGEPGTIFSP DGRALGHPQK GAKGEPGFRG PPGPYGRPGH KGEIGFPGRP
1001 GRPGTNGLKG EKGEPGDASL GFSMRGLPGP PGPPGPPGPP GMPIYDSNAF
1051 VESGRPGLPG QQGVQGPSGP KGDKGEVGPP GPPGQFPIDL FHLEAEMKGD
1101 KGDRGDAGQK GERGEPGAPG GGFFSSSVPG PPGPPGYPGI PGPKGESIRG
1151 PPGPPGRQGP PGIGYEGRQG PPGPPGPPGP PSFPGPHRQT VSVPGPPGPP
1201 GPPGPPGAMG ASAGQVRIWA TYQTMLDKIR EVPEGWLIFV AEREELYVRV
1251 RNGFRKVLLE ARTALPRGTG NEVAALQPPL VQLHEGSPYT RREYSYSTAR
1301 PWRADDILAN PPRLPDRQPY PGVPHHHSSY VHLPPARPTL SLAHTHQDFQ
1351 PVLHLVALNT PLSGGMRGIR GADFQCFQQA RAVGLSGTFR AFLSSRLQDL
1401 YSIVRRADRG SVPIVNLKDE VLSPSWDSLF SGSQGQLQPG ARIFSFDGRD
1451 VLRHPAWPQK SVWHGSDPSG RRLMESYCET WRTETTGATG QASSLLSGRL
1501 LEQKAASCHN SYIVLCIENS FMTSFSK
```

Searcher : Shears 308-4994

Same as EM1 Fig 2

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HITS AT: 1511-1518

REFERENCE 1: 124:252313

L4 ANSWER 13 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **175337-11-8** REGISTRY
CN Collagen (mouse clone P13124/GEN19/K17.6 type XVIII gene Col18a1 .alpha.1-chain 1774-amino acid isoform precursor reduced) (9CI) (CA INDEX NAME)
CI MAN
SQL 1774

SEQ
```
      1 MAPDPSRRLC LLLLLLLSCR LVPASADGNS LSPLNPLVWL WPPKTSDSLE
     51 GPVSKPQNSS PVQSTENPTT HVVPQDGLTE QQTTPASSEL PPEEEEEEDQ
    101 KAGQGGSPAT PAVPIPLVAP AASPDMKEEN VAGVGAKILN VAQGIRSFVQ
    151 LWDEDSTIGH SAGTEVPDSS IPTVLPSPAE LSSAPQGSKT TLWLSSAIPS
    201 SPDAQTTEAG TLAVPTQLPP FQSNLQAPLG RPSAPPDFPG RAFLSSSTDQ
    251 GSSWGNQEPP RQPQHLEGKG FLPMTARSSQ QHRHSDVHSD IHGHVPLLPL
    301 VTGPLVTASL SVHGLLSVPS SDPSGQLSQV AALPGFPGTW VSHVAPSSGT
    351 GLSNDSALAG NGSLTSTSRC LPLPPTLTLC SRLGIGHFWL PNHLHHTDSV
    401 EVEATVQAWG RFLHTNCHPF LAWFFCLLLA PSCGPGPPPP LPPCRQFCEA
    451 LEDECWNYLA GDRLPVVCAS LPSQEDGYCV FIGPAAENVA EEVGLLQLLG
    501 DPLPEKISQI DDPHVGPAYI FGPDSNSGQV AQYHFPKLFF RDFSLLFHVR
    551 PATEAAGVLF AITDAAQVVV SLGVKLSEVR DGQQNISLLY TEPGASQTQT
    601 GASFRLPAFV GQWTHFALSV DGGSVALYVD CEEFQRVPFA RASQGLELER
    651 GAGLFVGQAG TADPDKFQGM ISELKVRKTP RVSPVHCLDE EDDDEDRASG
    701 DFGSGFEESS KSHKEDTSLL PGLPQPPPVT SPPLAGGSTT EDPRTEETEE
    751 DAAVDSIGAE TLPGTGSSGA WDEAIQNPGR GLIKGGMKGQ KGEPGAQGPP
    801 GPAGPQGPAG PVVQSPNSQP VPGAQGPPGP QGPPGKDGTP GRDGEPGDPG
    851 EDGRPGDTGP QGFPGTPGDV GPKGEKGDPG IGPRGPPGPP GPPGPSFRQD
    901 KLTFIDMEGS GFSGDIESLR GPRGFPGPPG PPGVPGLPGE PGRFGINGSY
    951 APGPAGLPGV PGKEGPPGFP GPPGPPGPPG KEGPPGVAGQ KGSVGDVGIP
   1001 GPKGSKGDLG PIGMPGKSGL AGSPGPVGPP GPPGPPGPPG PGFAAGFDDM
   1051 EGSGIPLWTT ARSSDGLQGP PGSPGLKGDP GVAGLPGAKG EVGADGAQGI
   1101 PGPPGREGAA GSPGPKGEKG MPGEKGNPGK DGVGRPGLPG PPGPPGPVIY
   1151 VSSEDKAIVS TPGPEGKPGY AGFPGPAGPK GDLGSKGEQG LPGPKGEKGE
   1201 PGTIFSPDGR ALGHPQKGAK GEPGFRGPPG PYGRPGHKGE IGFPGRPGRP
   1251 GTNGLKGEKG EPGDASLGFS MRGLPGPPGP PGPPGPPGMP IYDSNAFVES
   1301 GRPGLPGQQG VQGPSGPKGD KGEVGPPGPP GQFPIDLFHL EAEMKGDKGD
   1351 RGDAGQKGER GEPGAPGGGF FSSSVPGPPG PPGYPGIPGP KGESIRGPPG
   1401 PPGRQGPPGI GYEGRQGPPG PPGPPGPPSF PGPHRQTVSV PGPPGPPGPP
   1451 GPPGAMGASA GQVRIWATYQ TMLDKIREVP EGWLIFVAER EELYVRVRNG
   1501 FRKVLLEART ALPRGTGNEV AALQPPLVQL HEGSPYTRRE YSYSTARPWR
   1551 ADDILANPPR-LPDRQPYPGV PHHHSSYVHL PPARPTLSLA HTHQDFQPVL
   1601 HLVALNTPLS GGMRGIRGAD FQCFQQARAV GLSGTFRAFL SSRLQDLYSI
   1651 VRRADRGSVP IVNLKDEVLS PSWDSLFSGS QGQLQPGARI FSFDGRDVLR
   1701 HPAWPQKSVW HGSDPSGRRL MESYCETWRT ETTGATGQAS SLLSGRLLEQ
   1751 KAASCHNSYI VLCIENSFMT SFSK
```

Searcher : Shears 308-4994

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HITS AT: 1758-1765

REFERENCE 1: 124:252313

L4 ANSWER 14 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **175337-10-7** REGISTRY
CN Collagen (mouse clone P13124/GEN19/K17.6 type XVIII gene Col18a1 .alpha.1-chain 1315-amino acid isoform precursor reduced) (9CI) (CA INDEX NAME)
CI MAN
SQL 1315

SEQ
1 MAPRWHLLDV LTSLVLLLVA RVSWAEPENV AEEVGLLQLL GDPLPEKISQ
51 IDDPHVGPAY IFGPDSNSGQ VAQYHFPKLF FRDFSLLFHV RPATEAAGVL
101 FAITDAAQVV VSLGVKLSEV RDGQQNISLL YTEPGASQTQ TGASFRLPAF
151 VGQWTHFALS VDGGSVALYV DCEEFQRVPF ARASQGLELE RGAGLFVGQA
201 GTADPDKFQG MISELKVRKT PRVSPVHCLD EEDDDEDRAS GDFGSGFEES
251 SKSHKEDTSL LPGLPQPPPV TSPPLAGGST TEDPRTEETE EDAAVDSIGA
301 ETLPGTGSSG AWDEAIQNPG RGLIKGGMKG QKGEPGAQGP PGPAGPQGPA
351 GPVVQSPNSQ PVPGAQGPPG PQGPPGKDGT PGRDGEPGDP GEDGRPGDTG
401 PQGFPGTPGD VGPKGEKGDP GIGPRGPPGP PGPPGPSFRQ DKLTFIDMEG
451 SGFSGDIESL RGPRGFPGPP GPPGVPGLPG EPGRFGINGS YAPGPAGLPG
501 VPGKEGPPGF PGPPGPPGPP GKEGPPGVAG QKGSVGDVGI PGPKGSKGDL
551 GPIGMPGKSG LAGSPGPVGP PGPPGPPGPP GPGFAAGFDD MEGSGIPLWT
601 TARSSDGLQG PPGSPGLKGD PGVAGLPGAK GEVGADGAQG IPGPPGREGA
651 AGSPGPKGEK GMPGEKGNPG KDGVGRPGLP GPPGPPGPVI YVSSEDKAIV
701 STPGPEGKPG YAGFPGPAGP KGDLGSKGEQ GLPGPKGEKG EPGTIFSPDG
751 RALGHPQKGA KGEPGFRGPP GPYGRPGHKG EIGFPGRPGR PGTNGLKGEK
801 GEPGDASLGF SMRGLPGPPG PPGPPGPPGM PIYDSNAFVE SGRPGLPGQQ
851 GVQGPSGPKG DKGEVGPPGP PGQFPIDLFH LEAEMKGDKG DRGDAGQKGE
901 RGEPGAPGGG FFSSSVPGPP GPPGYPGIPG PKGESIRGPP GPPGRQGPPG
951 IGYEGRQGPP GPPGPPGPPS FPGPHRQTVS VPGPPGPPGP PGPPGAMGAS
1001 AGQVRIWATY QTMLDKIREV PEGWLIFVAE REELYVRVRN GFRKVLLEAR
1051 TALPRGTGNE VAALQPPLVQ LHEGSPYTRR EYSYSTARPW RADDILANPP
1101 RLPDRQPYPG VPHHHSSYVH LPPARPTLSL AHTHQDFQPV LHLVALNTPL
1151 SGGMRGIRGA DFQCFQQARA VGLSGTFRAF LSSRLQDLYS IVRRADRGSV
1201 PIVNLKDEVL SPSWDSLFSG SQGQLQPGAR IFSFDGRDVL RHPAWPQKSV
1251 WHGSDPSGRR LMESYCETWR TETTGATGQA SSLLSGRLLE QKAASCHNSY
1301 IVLCIENSFM TSFSK

HITS AT: 1299-1306

REFERENCE 1: 124:252313

L4 ANSWER 15 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **156655-88-8** REGISTRY
CN Collagen (mouse clone mc19/mcE4/mc3 type XVIII .alpha.1-chain

C-terminal fragment reduced) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Collagen (mouse clones mc19/mcE4/mc3 .alpha.1(SVIII)-chain fragment)
CI MAN
SQL 1288

```
SEQ      1 ENVAEEVGLL QLLGDPLPEK ISQIDDPHVG PAYIFGPDSN SGQVAQYHFP
        51 KLFFRDFSLL FHVRPATEAA GVLFAITDAA QVVVSLGVKL SEVRDGQQNI
       101 SLLYTEPGAS QTQTGASFRL PAFVGQWTHF ALSVDGGSVA LYVDCEEFQR
       151 VPFARASQGL ELERGAGLFV GQAGTADPDK FQGMISELKV RKTPRVSPVH
       201 CLDEEDDDED RASGDFGSGF EESSKSHKED TSLLPGLPQP PPVTSPPLAG
       251 GSTTEDPRTE ETEEDAAVDS IGAETLPGTG SSGAWDEAIQ NPGRGLIKGG
       301 MKGQKGEPGA QGPPGPAGPQ GPAGPVVQSP NSQPVPGAQG PPGPQGPPGK
       351 DGTPGRDGEP GDPGEDGRPG DTGPQGFPGT PGDVGPKGEK GDPGIGPRGP
       401 PGPPGPPGPS FRQDKLTFID MEGSGFSGDI ESLRGPRGFP GPPGPPGVPG
       451 LPGEPGRFGI NGSYAPGPAG LPGVPGKEGP PGFPGPPGPP GPPGKEGPPG
       501 VAGQKGSVGD VGIPGPKGSK GDLGPIGMPG KSGLAGSPGP VGPPGPPGPP
       551 GPPGPGFAAG FDDMEGSGIP LWTTARSSDG LQGPPGSPGL KGDPGVAGLP
       601 GAKGEVGADG AQGIPGPPGR EGAAGSPGPK GEKGMPGEKG NPGKDGVGRP
       651 GLPGPPGPPG LVIYVSSEDK AIVSTPGPEG KPGYAGFPGP AGPKGDLGSK
       701 GEQGLPGFKG EKGEPGTIFS PDGRRLGHPQ KGAKGEPGFR GPPGPYGRPG
       751 HKGEIGFPGR PGRPGTNGLK GEKGEPGDAS LGFSMRGLPG PPGPPGPPGP
       801 PGMPIYDSNA FVESGRPGLP GQQGVQGPSG PKGDKGEVGP PGPPGQFPID
       851 LFHLEAEMKG DKGDRGDAGQ KGERGEPGAP GGGFFSSSVP GPPGPPGYPG
       901 IPGPKGESIR GPPGPPGPQG PPGIGYEGRQ GPPGPPGPPG PPSFPGPHRQ
       951 TVSVPGPPGP PGPPGPPGAM GASAGQVRIW ATYQTMLDKI REVPEGWLIF
      1001 VAEREELYVR VRNGFRKVLL EARTALLRGT GNEVAAFQPP LVQLHEGSPY
      1051 TRREYSYSTA RPWRADDILA NPPRLPDRQP YPGVPHHHSS YVHLPPARPT
      1101 LSLAHTHQDF QPVLHLVALN TPLSGGMRGI RGADFQCFQQ ARAVGLSGTF
      1151 RAFLSSRLQD LYSIVRRADR GSVPIVNLKD EVLSPSWDSL FSGSQGQVQP
      1201 GARIFSFDGR DVLRHPAWPQ KSVWHGSDPS GRRLMESYCE TWRTETTGAT
      1251 GQASSLLSGR LLEQKAASCH NSYIVLCIEN SFMTSFSK
                                ========
```

HITS AT: 1272-1279

REFERENCE 1: 121:76556

L4 ANSWER 16 OF 17 REGISTRY COPYRIGHT 2001 ACS
RN **155982-66-4** REGISTRY
CN Collagen (mouse clone MM-103 gene COL18A1 type XVIII .alpha.1-chain
C-terminal fragment reduced) (9CI) (CA INDEX NAME)
OTHER NAMES:
CN Collagen .alpha.1 chain (mouse clone MM-103 gene COL18A1 type XVIII
C-terminal fragment)
CI MAN
SQL 482

```
SEQ      1 DSNAFVESGR PGLPGQQGVQ GPSGPKGDKG EVGPPGPPGQ FPIDLFHLEA
        51 EMKGDKGDRG DAGQKGERGE PGAPGGGFFS SSVPGPPGPP GYPGIPGPKG
```

Searcher : Shears 308-4994

```
       101 ESIRGPPGPP GRQGPPGIGY EGRQGPPGPP GPPGPPSFPG PHRQTVSVPG
       151 PPGPPGPPGP PGAMGASAGQ VRIWATYQTM LDKIREVPEG WLIFVAEREE
       201 LYVRVRNGFR KVLLEARTAL PRGTGNEVAA LQPPLVQLHE GSPYTRREYS
       251 YSTARPWRAD DILANPPRLP DRQPYPGVPH HHSSYVHLPP ARPTLSLAHT
       301 HQDFQPVLHL VALNTPLSGG MRGIRGADFQ CFQQARAVGL SGTFRAFLSS
       351 RLQDLYSIVR RADRGSVPIV NLKDEVLSPS WDSLFSGSQG QLQPGARIFS
       401 FDGRDVLRHP AWPQKSVWHG SDPSGRRLME SYCETWRTET TGATGQASSL
       451 LSGRLLEQKA ASCHNSYIVL CIENSFMTSF SK
                   ===== ===
HITS AT:    466-473

REFERENCE   1:  121:28272

L4    ANSWER 17 OF 17  REGISTRY  COPYRIGHT 2001 ACS
RN    152924-73-7  REGISTRY
CN    Collagen (mouse clone NA1/NA12/NA2611/NA286 reduced) (9CI)  (CA
      INDEX NAME)
CI    MAN
SQL   1140

SEQ       1 QRVPFARASQ GLELERGAGL FVGQAGTADP DKFQGMISEL KVRKTPRVSP
         51 VHCLDEEDDD EDRASGDFGS GFEESSKSHK EDTSLLPGLP QPPPVTSPPL
        101 AGGSTTEDPR TEETEEDAAV DSIGAETLPG TGSSGAWDEA IQNPGRGLIK
        151 GGMKGQKGEP GAQGPPGPAG PQGPAGPVVQ SPNSQPVPGA QGPPGPQGPP
        201 GKDGTPGRDG EPGDPGEDGR PGDTGPQGFP GTPGDVGPKG EKGDPGIGPR
        251 GPPGPPGPPG PSFRQDKLTF IDMEGSGFSG DIESLRGPRG FPGPPGPPGV
        301 PGLPGEPGRF GINGSYAPGP AGLPGVPGKE GPPGFPGPPG PPGPPGKEGP
        351 PGVAGQKGSV GDVGIPGPKG SKGDLGPIGM PGKSGLAGSP GPVGPPGPPG
        401 PPGPPGPGFA AGFDDMEGSG IPLWTTARSS DGLQGPPGSP GLKGDPGVAG
        451 LPGAKGEVGA DGAQGIPGPP GREGAAGSPG PKGEKGMPGE KGNPGKDGVG
        501 RPGLPGPPGP PGPVIYVSSE DKAIVSTPGP EGKPGYAGFP GPAGPKGDLG
        551 SKGEQGLPGP KGEKGEPGTI FSPDGRALGH PQKGAKGEPG FRGPPGPYGR
        601 PGHKGEIGFP GRPGRPGTNG LKGEKGEPGD ASLGFSMRGL PGPPGPPGPP
        651 GPPGMPIYDS NAFVESGRPG LPGQQGVQGP SGPKGDKGEV GPPGPPGQFP
        701 IDLFHLEAEM KGDKGDRGDA GQKGERGEPG APGGGFFSSS VPGPPGPPGY
        751 PGIPGPKGES IRGPPGPPGP QGPPGIGYEG RQGPPGPPGP PGPPSFPGPH
        801 RQTVSVPGPP GPPGPPGPPG AMGASAGQVR IWATYQTMLD KIREVPEGWL
        851 IFVAEREELY VRVRNGFRKV LLEARTALPR GTGNEVAALQ PPLVQLHEGS
        901 PYTRREYSYS TARPWRADDI LANPPRLPDR QPYPGVPHHH SSYVHLPPAR
        951 PTLSLAHTHQ DFQPVLHLVA LNTPLSGGMR GIRGADFQCF QQARAVGLSG
       1001 TFRAFLSSRL QDLYSIVRRA DRGSVPIVNL KDEVLSPSWD SLFSGSQGQL
       1051 QPGARIFSFD GRDVLRHPAW PQKSVWHGSD PSGRRLMESY CETWRTETTG
       1101 ATGQASSLLS GRLLEQKAAS CHNSYIVLCI ENSFMTSFSK
                                 ======= =
HITS AT:    1124-1131

REFERENCE   1:  120:292270

     FILE 'CAPLUS' ENTERED AT 11:00:29 ON 06 APR 2001
                          Searcher    :      Shears    308-4994
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-key terms
Claims 2-4 & 11

L5 1344 S EM1 OR EMI OR EM(W)(I OR 1)
L6 2 S L5 AND (ENDOSTATIN OR ENDO STATIN)
L7 1 S L6 NOT L2

L7 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2001 ACS
ACCESSION NUMBER: 1999:388288 CAPLUS
DOCUMENT NUMBER: 131:39759
TITLE: Restin and apomigren fragments of human collagen type XV .alpha.1 chain and their anti-angiogenic activities
INVENTOR(S): Sukhatme, Vikas P.
PATENT ASSIGNEE(S): Beth Israel Deaconess Medical Center, USA
SOURCE: PCT Int. Appl., 94 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9929856	A1	19990617	WO 1998-US26058	19981208
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, US, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9918088	A1	19990628	AU 1999-18088	19981208
EP 1037985	A1	20000927	EP 1998-962966	19981208
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.:
US 1997-67888 19971208
US 1998-82663 19980422
US 1998-108536 19981116
WO 1998-US26058 19981208

AB The invention relates to restin, a novel anti-angiogenic protein is described, as well as its fragment, designated apomigren. Restin is a proteolytic fragment of the C-terminal fragment of the NC10 domain of the .alpha.1 chain of human collagen type XV. Apomigren is a fragment of restin, and comprises the C-terminal 85 residues of restin,. Methods for expression of the proteins at high titer are also described. Restin inhibits the migration of endothelial cells in vitro and suppresses the growth of tumors in a xenograft renal carcinoma model. Apomigren has anti-angiogenic activity equal or superior to that of **endostatin**.

Searcher : Shears 308-4994

REFERENCE COUNT: 6
REFERENCE(S):
(1) Bachelot; Proceedings of the 89th Annual Meeting of the American Association for Cancer Research 1998, V39, P271
(2) Childrens Medical Center; WO 9715666 A 1997 CAPLUS
(3) Ramchandran, R; Biochem Biophys Res Comm 1999, V255, P735 CAPLUS
(4) Rehn, M; J Biol Chem 1994, V269(19), P13929 CAPLUS
(6) Searle, G; WO 9916899 A 1999 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

(FILE 'MEDLINE, BIOSIS, EMBASE, WPIDS, CONFSCI, SCISEARCH, JICST-EPLUS, JAPIO' ENTERED AT 11:01:47 ON 06 APR 2001)
L8 1 S L6

L8 ANSWER 1 OF 1 WPIDS COPYRIGHT 2001 DERWENT INFORMATION LTD
ACCESSION NUMBER: 1999-385604 [32] WPIDS
CROSS REFERENCE: 1999-394974 [33]; 1999-404943 [34]
DOC. NO. CPI: C1999-113510
TITLE: Mutant **endostatin** having anti-angiogenic activity.
DERWENT CLASS: B04 D16
INVENTOR(S): SUKHATME, V P
PATENT ASSIGNEE(S): (BETH-N) BETH ISRAEL DEACONESS MEDICAL CENT
COUNTRY COUNT: 85
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 9929855	A1	19990617	(199932)*	EN	105
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW					
W: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW					
AU 9917180	A	19990628	(199946)		
EP 1037983	A1	20000927	(200048)	EN	
R: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 9929855	A1	WO 1998-US26057	19981208
AU 9917180	A	AU 1999-17180	19981208
EP 1037983	A1	EP 1998-962006	19981208

Searcher : Shears 308-4994

WO 1998-US26057 19981208

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9917180	A	Based on	WO 9929855
EP 1037983	A1	Based on	WO 9929855

PRIORITY APPLN. INFO: US 1998-108536 19981116; US 1997-67888 19971208; US 1998-82663 19980422

AN 1999-385604 [32] WPIDS

CR 1999-394974 [33]; 1999-404943 [34]

AB WO 9929855 A UPAB: 20001001

NOVELTY - A mutant **endostatin** (EM) having anti-angiogenic activity comprising a C-terminal sequence (I), is new.

DETAILED DESCRIPTION - An isolated anti-angiogenic peptide, where the C-terminal comprises the amino acid sequence SYIVLCIE (I).

INDEPENDENT CLAIMS are also included for the following:

(a) an isolated polynucleotide amplified by the following primers (P1), and (P2):

TTCCATATGCATACTCATCAGGACTTTCAGGCA (P1); and

TTAGCGGCCGCCTACTCAATGCAGAGGACGATGTA (P2);

(b) a host cell transformed with a polynucleotide, encoding **EM1**, operably linked to an expression control sequence;

(c) production of **EM1**;

(d) a fusion protein comprising two or more proteins and also comprising **EM1**;

(e) a process for providing a mammal with **EM1**;

(f) producing an isolated polynucleotide which hybridizes under moderate stringency;

(g) an **EM1** polynucleotide isolated by (f);

(h) antibodies to **EM1**; and

(i) a mutant, derivative, analogue or homologue of **EM1**

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ACTIVITY - Anti-angiogenic; cytostatic.

MECHANISM OF ACTION - None given.

USE - Compositions comprising **EM1** or fusion proteins comprising **EM1**, are useful for treating diseases characterized by angiogenic activity, such as angiogenesis-dependent cancers, benign tumors, rheumatoid arthritis, psoriasis, ocular angiogenesis, Osler-Webber Syndrome, myocardial angiogenesis, plaque neovascularization, telangiectasia, hemophiliac joints, angiofibroma, wound granulation, intestinal adhesions, atherosclerosis, scleroderma, hypertrophic scars, cat scratch disease, Helicobacter pylori ulcers, dialysis graft vascular access stenosis, contraception and obesity. In particular, the diseases treatable by **EM1** comprise cancer, especially renal cancer. The methods provide a means for introducing **EM1** into

mammalian cells via gene therapy, for production of **EM1** via recombinant means, as well as recombinant production of the **EM1** protein. (All claimed).

ADVANTAGE - **EM1** performs as well or better than whole **endostatin**. In a nude mouse model, growth of renal cell cancer (RCC) was suppressed by systemic administration of **EM1** at a rate of 20 mg/kg body weight. Use of **EM1** is advantageous for treatment of angiogenic diseases in that increasingly smaller peptides are more potent on a weight basis, and may be able to better penetrate tissues.

Dwg.20/26

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